

The Science of the Future

How do we deliver successful and future proofed innovation facilities whilst achieving commercial value? Our round table brought together a group of industry experts to provide insights in this important sector.

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The science and innovation sector has become a crucial pillar of the UK economy, with almost £74bn in annual turnover generated in the UK since 2018. With the government recently announcing plans to make the UK a superpower in science research and development (R&D), we can only expect to see even greater growth over the coming years.

But there are still many unknowns in this rapidly changing landscape. Which direction will the market move in? What will the long term impact of Covid-19 be? Is it realistic to expect net zero science developments in the future? Looking specifically at the investment, development and design of science buildings, we brought together leading experts to harness some valuable insights into the future of this fascinating sector.

1. The investment conundrum...who is investing and how does it stack up?

Whereas historically, science buildings were developed for owner occupiers with very specific requirements, we have seen a move towards facilities becoming much more speculative and flexible. With multi-tenanted buildings a particular area of focus in the UK Government's roadmap and the impact of Covid-19 depleting the value of retail and office space, science is becoming a more viable option for many investors.

But how attractive is the sector to private investors? Science space has a lower net to gross internal area ratio, delivers lower yields than office space and is more complex. Securing investment for a science-based development can be challenging.

However, interest in this sector has grown significantly from a capital perspective.

Artem Korolev, Mission Street's Managing Director and expert in development, asset management and real estate private equity says: "Rather than having public sector bodies, owner occupiers and a few niche operators delivering space in the sector, there is now considerable interest ranging from landowners exploring different uses for their sites, private equity funds, pension funds etc., with a variety of different business models."

Liam Nicholls, Partner at Creative Places agrees, "I'm having phone calls with investors that I never would have expected. They're worried about the office sector and can see that the healthcare research and development industry is more resilient."

This shift, according to Artem, has been triggered by investors looking at the US' more mature sector and comparing it to the competitive landscape in the UK. "Its innate complexity - multi-tenanted and multipurpose - demands a more hands-on, client-focused approach from developers more akin to PRS or co-working spaces, than simply leasing a Cat A office space for 10 years and collecting rent. A niche previously dominated by the public sector is now attracting an increasing amount of commercial investors looking to develop science buildings for a return'.

Artem continues to explore the issue of viability "a lot of our work has been quite interesting as we are looking at uses which were previously undertaken by owner occupiers, and working out how they can be delivered with a landlord/tenant model of interest to occupiers, particularly in terms of establishing a suitable specification that addresses the customer's needs in a viable commercial development."

Nick Flanagan highlighted the success of some forward thinking science campus developments that allow tenants to hire out equipment by the hour and assists with the outlay for certain plants.

Andrew Somerville remarked that Boston's Lab Central has a similar approach. "Tenants pay for benches and different types of lab space by the hour. It has a waiting list of 200 companies wanting to rent a space in the building. And while this could be replicated in the UK, it would require an operator, as a developer typically wouldn't operate the space."

"The problem with the development of start-up incubators on a standalone basis is that they require significant capital outlay to deliver typically fully fitted out space, given earlier stage companies do not have the budget for their own fitout, which is difficult to justify when getting much shorter leases/licenses, less stable tenants, lower ratios of gross-to-net areas and greater operating cost leakage from rents, comments **Artem Korolev of Mission Street.**

"In order to make this model viable for real estate investors, the funding model would need to be different, for example, through subsidies or leases taken on by public sector incubators, or incubator spaces would need to be delivered as a component of bigger projects with a variety of tenants/lease lengths, or in locations where the science occupational demand is strong whilst other use classes are secondary, keeping land prices low enough to support viability,"

Introducing our experts:

Chair: Emily Slupek
Buro Four, Project Director

Francesca Attard,
Buro Four, Associate Director

Nick Flanagan
CB3 Consulting, Director

Jon Flin
CB3 Consulting, Director

Ed Hayden
Scott Brownrigg+, Director

Artem Korolev
Mission Street, Managing Director

Jason Lebidineuse
Scott Brownrigg+, Director

Liam Nicholls
Creative Places, Partner

Mark Nowell
Wilmott Dixon, Design Manager

Joe Richardson
Buro Four, Associate Director

Andrew Somerville
Hoare Lea, Partner

Neil Wyld
Hoare Lea, Senior Associate

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2. Delivering viable, functional and future-proof buildings for both tenants and investors alike.

In response to what makes a successful, commercially-led science development, **Liam Nicholls** explained “If you deliver a CAT A office for someone to come along and put their own laboratory into then you won't make a viable development in the sector. If you bring forward space that is versatile enough to accommodate laboratory buildings and are willing to take a view as laboratory space as an asset class in its own right, then you will be able to make successful choices around investments.”

Artem agrees and elaborates, highlighting that “the model for a successful development is much more operationally intensive and design teams need to strike a unique balance between what the tenant wants and helping the developer achieve commercial viability.”

“The sector is incredibly diverse in terms of tenants which is what makes it so fascinating.” states **Jason Lebenuise from Scott Brownrigg**. Having a wide range of occupiers breeds collaboration between unexpected parties and this is where exciting progress can be made. Striking the balance between flexibility to accommodate a range of occupiers and planning for specific functionality is key to achieve commerciality.

Nick Flanagan of CB3 explained that “Focusing on who your tenants will be, what's around them and what sciences they want to do: that's when you stop over-designing buildings, which makes things uneconomic. There's no need to put in 50% labs and all the air extract systems for life sciences if it isn't required” As teams, we have to really understand the target market to achieve commerciality without compromising the function of the building.

Nick goes on to explain “If you can get away with high office space with low tech then there's no reason not to do that. It's about getting the right thing for the right reasons”.

3. Labs : offices ratio trends.

Another major focus for debate is the evolving shift in the space requirements for office and laboratory areas. Early models for incubators required equal space for labs, lab support and office space. Over the last decade, the trend was for more office space and less lab space in response to advances in technology and the availability of more data from past research.

When asked how the increase in home working post-Covid-19 might impact that trend, **Liam Nicholls** highlights two twin tracked phenomenon whereby “Wet lab users are increasingly looking at models with less

write-up space, so people can work from home as a result of Covid.”

“However, there are now other occupiers within healthcare, R&D such as med tech and data analytics, where no wet lab space is needed at all but collaboration is still required. As the AI boom happens and we move towards a more analytics based way of conducting research for healthcare, those requirements are becoming more frequent. This might retain the need for office space to accommodate these growing companies”.

Nick Flanagan agrees, wondering whether the office will be more of a space for collaboration.

Meanwhile, for one of **Artem Korolev's** projects that originally had a brief of high density desking, there are now discussions about reducing the desking to allow for more quiet spaces to accommodate the need to collaborate over video with people working remotely.

As professionals within the built environment, working together is essential. Only then can we find solutions to deliver buildings that help our clients navigate this changing landscape.

4. Which science sectors are thriving?

Since Covid-19 has given healthcare investment fresh impetus, the sector is generating substantial interest. Will we see rapid growth over the coming years? **Liam Nicholls of Creative Places** elaborates: “Healthcare R&D is doing well. I predict a growth in cell and gene therapy, which is very different to the traditional pharmaceutical model in its manufacturing process as it is more around precision medicine.

Liam explains that, “labs in cell and gene therapy need to patent and produce drugs in small batches in-house. As an industry we will need to really understand what the requirements are both at the R&D phase but also into their manufacturing process as at the moment we are very under resourced to cater for this in terms of our knowledge.”

5. How is occupier demand shifting?

The Government roadmap outlines the UK's ambition for new technology innovation zones, leading our conversation to the future: where might the hotspots be and what will occupiers demand of them? Science hubs are increasingly clustering near anchor tenants such as universities and large corporates, in well-connected city locations. A blend of healthcare, universities, corporates and small companies is ideal for occupiers linking research, testing and implementation in a live environment.

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“Wet lab users are increasingly looking at models with less write-up space so people can work from home”

Liam Nicholls points out that, “having a tenant mix of large corporates and small tenants is fundamentally what creates the open innovation ecosystems where tenants want to be and want to work.”

Neil Wylde, Senior Associate at Hoare Lea talked about the growing importance of a development’s IT credentials. “Your building’s Wired score can be key for attracting science-based tenants, particularly with edge computing on the horizon and real-time access to data needed for remote teams.”

Moreover, a building’s wellness capabilities are “one of the biggest drivers for tenant demand,” explains **Andrew Somerville of Hoare Lea**. He continues, “this is what attracts good staff and retains them.”

6. Will laboratory locations change?

Looking at the location of innovation zones across the UK, the type of science differs between regions. For example, developers look to Cardiff for wafer fabrication, Manchester for materials and life sciences, the South West for advanced manufacturing.

Andrew Somerville, Director at Hoare Lea elaborates “even within hubs there are specialisms in particular areas depending on who the anchor is next door. Just look at London: Kings Cross hosts advanced therapeutics so they can be near to the train line to Stevenage; Imperial College accommodates Day 1 gene therapy firms; White City and Waterloo serve Day 2 gene therapy firms which are a bit more IP protected; and South London fosters cancer research.”

With the rise of artificial intelligence, robotics and remote working along with a decreasing need for laboratory space, we wonder whether more lab spaces will be moved to cheaper and less desirable locations in the future.

Neil Wylde explains that this is already happening on a smaller scale: “We are seeing some elements being made remote from the main workspace. For example, in London where space is at a premium, there are labs that have remote storage facilities. I can see more elements being made remote, but perhaps not all laboratory areas. People want to be on the edge of clinical trials, linking their research with live patients in NHS facilities. That blend of healthcare, universities, corporates and small companies it is the ultimate cure-all if you like

7. Delivering sustainable science buildings.

It’s a fact: science labs are energy-intensive buildings. But with the UK aiming for net zero emissions by 2050, the pressure is on for the science sector to come up with environmentally-friendly solutions that reduce their buildings’ carbon footprint but don’t blow the budget.

Sustainability measures often increase the build cost but don’t increase rental value. The party paying for it often isn’t the one that benefits from the reduced running costs brought about by sustainable buildings. However, sustainable buildings are increasingly more attractive to tenants and there is no question as to our industry’s responsibility to the environment, no matter what the sector.

One solution to combatting the intensive energy demand is “creating an ‘energy envelope’ where the higher energy-consuming buildings are off-set by other carbon negative buildings and holistic strategies, such as ground source heat pumps,” says **Andrew Somerville**.

Ed Hayden of Scott Brownrigg+ reveals that there is “an uplift in demand for technology that tracks the use of a building to improve its energy usage.” An example of this would be HVAC systems that can autonomously adapt to changes in the weather to save energy.

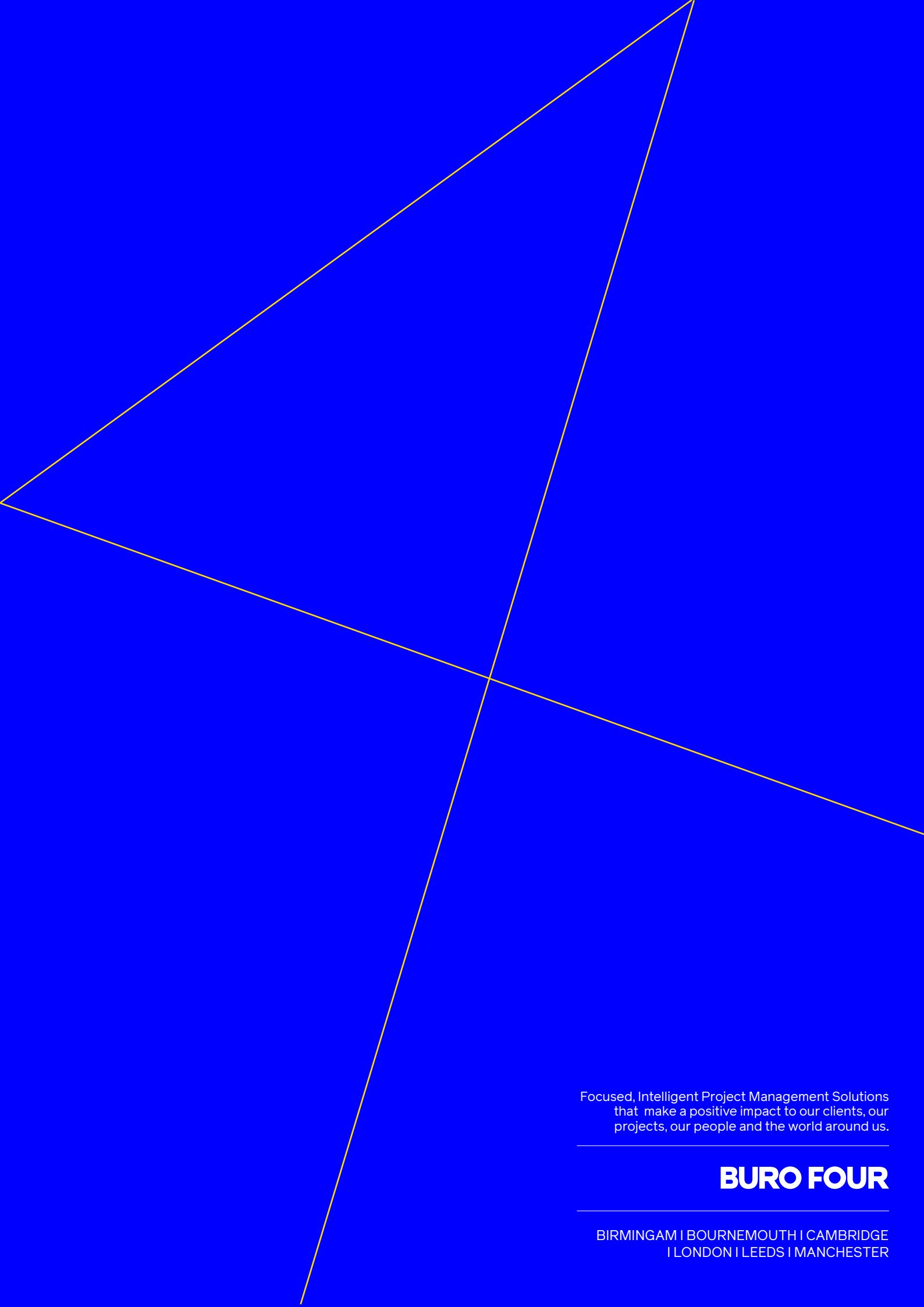
It’s likely we’ll see more smart buildings and similar innovative solutions since environmental credentials are becoming more of a driver for tenant occupancies. However, **Liam Nicholls** points out that “it is a balancing act for science companies. They don’t want to design to lower their energy credentials to then find they can’t ramp up to achieve potential changes in regulations as the systems are too eco-friendly.”

Have your say

You’ve heard what the experts predict for the future of the science, innovation and R&D sector. What do you think? Is there a specific point we raised you want to talk more about? Chat to us on LinkedIn, spark a discussion on Twitter or contact our team. We’d love to hear from you.



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